ENERGY STAR® PortfolioManager®

Web Services

Connection and Sharing for Exchanging Data

February 2015

Contents

Connecting with your customers to exchange data in Portfolio Manager is a four-step process. In the first two steps, the user adds you as a “contact” (or connection) in his or her account and then you accept the connection. After the connection has been accepted, in the last two steps the user shares properties and/or meters with you, and then you accept each share. The connection and sharing steps, for both you and the user, are outlined in sections one through four below.

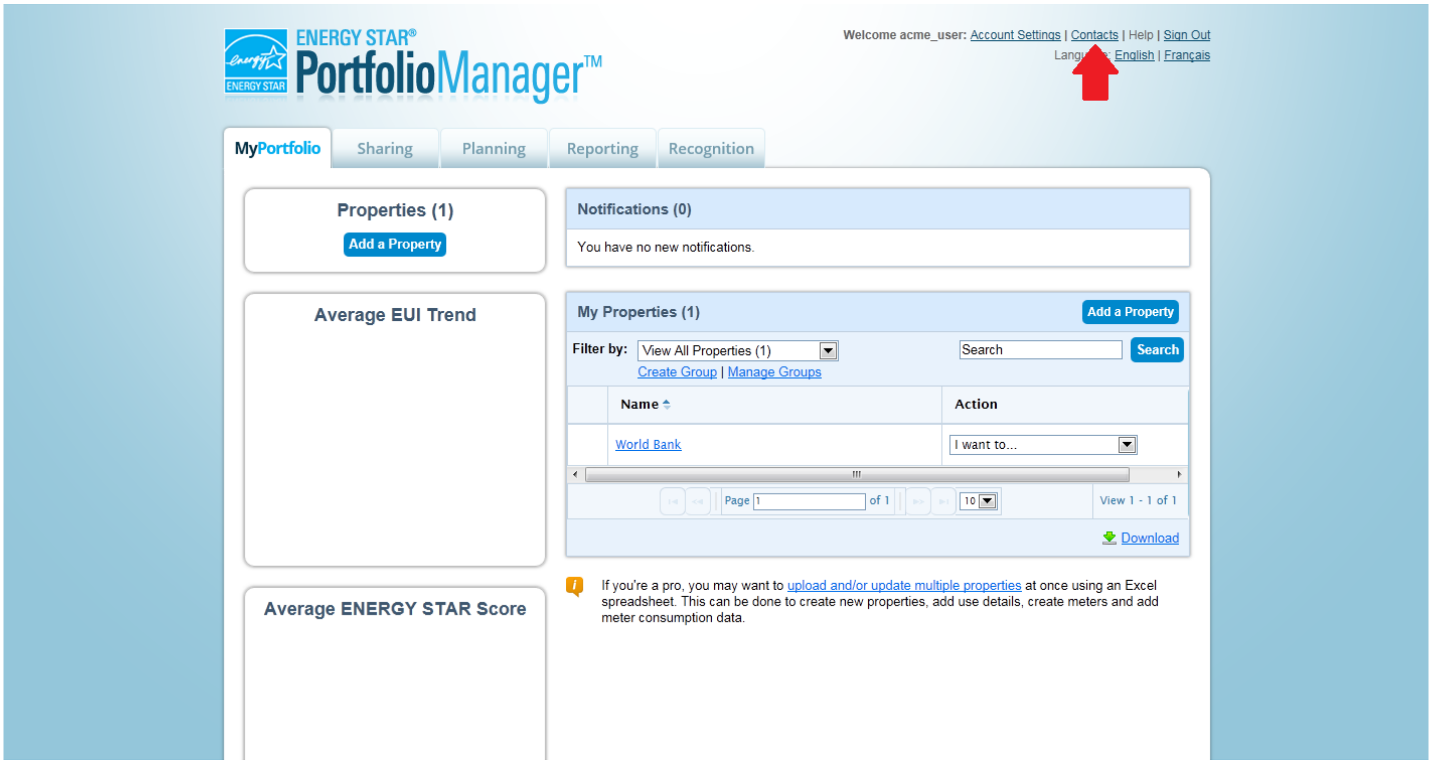
The exception to this four-step workflow is “share forward” in which someone shares a property or meter that was previously shared with them. In this case, the account-level connection and the property and meter shares may happen simultaneously instead of sequentially. Share forward is covered in additional detail in its own section.

Finally, sharing permissions can be edited or changed by the issuer after shares have been accepted. Best practices for managing these updates are covered in the section on ongoing share management.

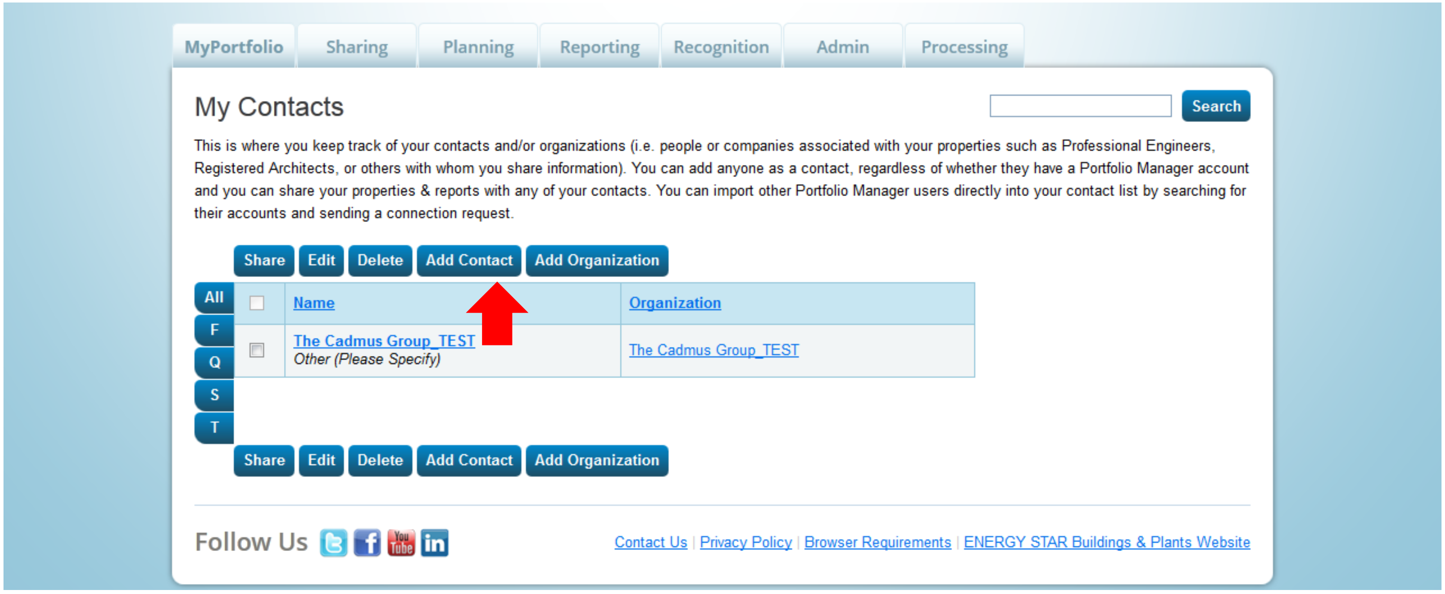
Step 1: A User Adds You as a Contact

The user initiates the sharing process by adding you as a contact (or connection) in his or her account. This action is done as follows:

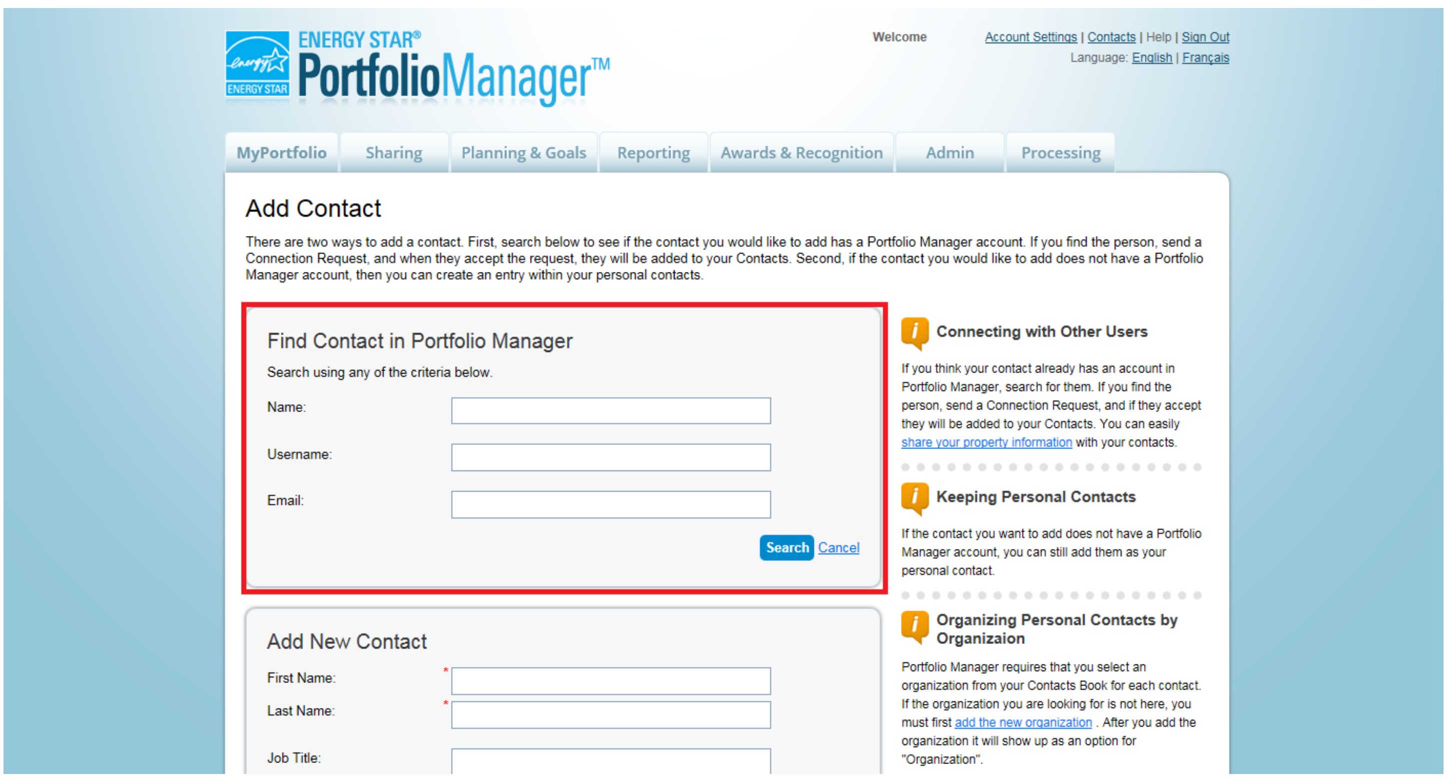
Step 1a: The user logs in to Portfolio Manager and clicks on the “contacts” link in the upper right-hand corner.



Step 1b: On the "My Contacts" page, the user clicks on the "Add Contact" button.

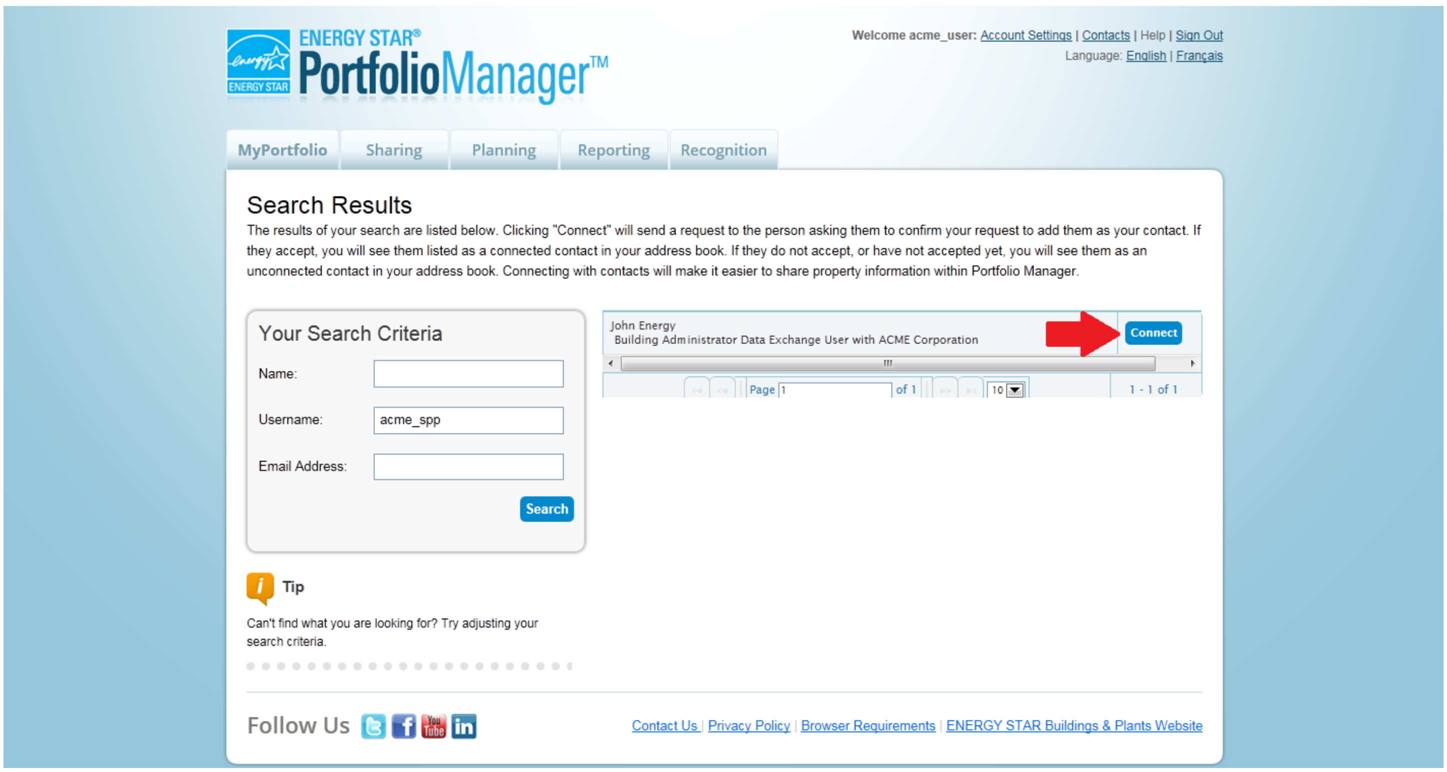


Step 1c: On the "Add Contact" page, the user searches for your organization by name, username or email address.

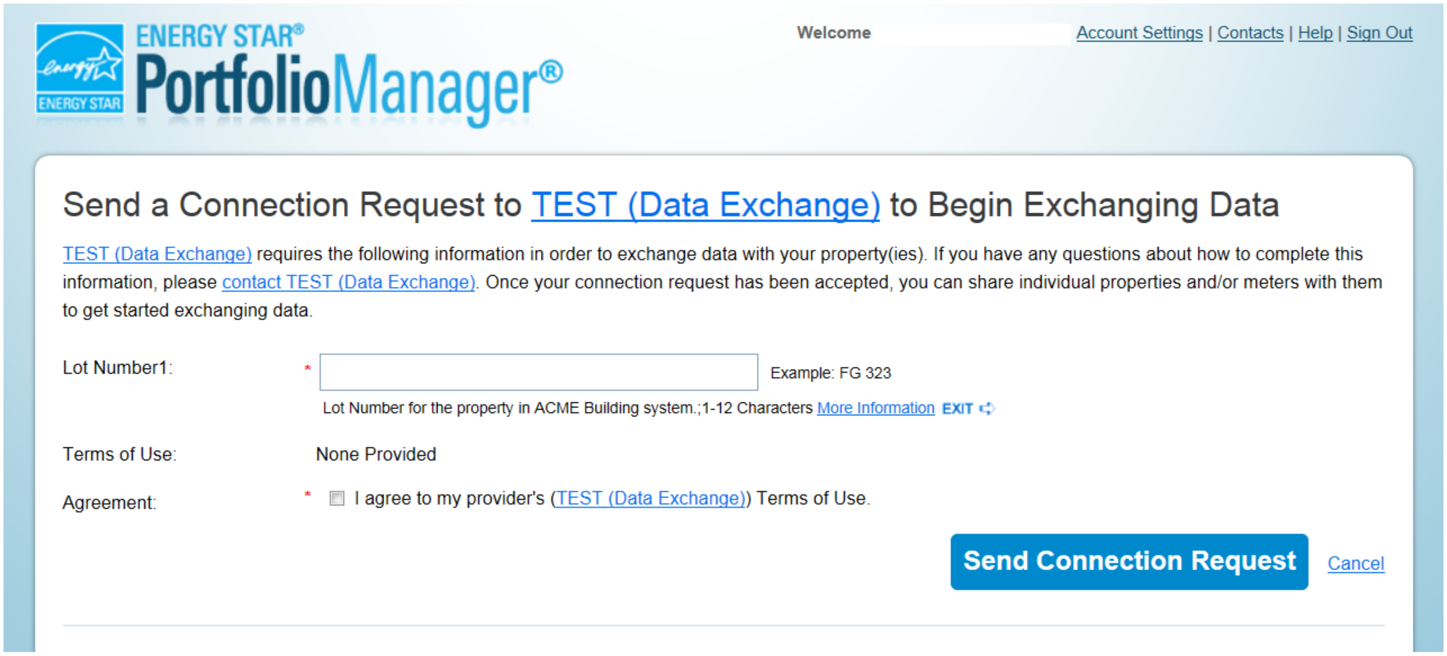


Please note that users can only find and connect with your account if it is searchable in Portfolio Manager. On the Account Settings page, you can change your searchability settings.

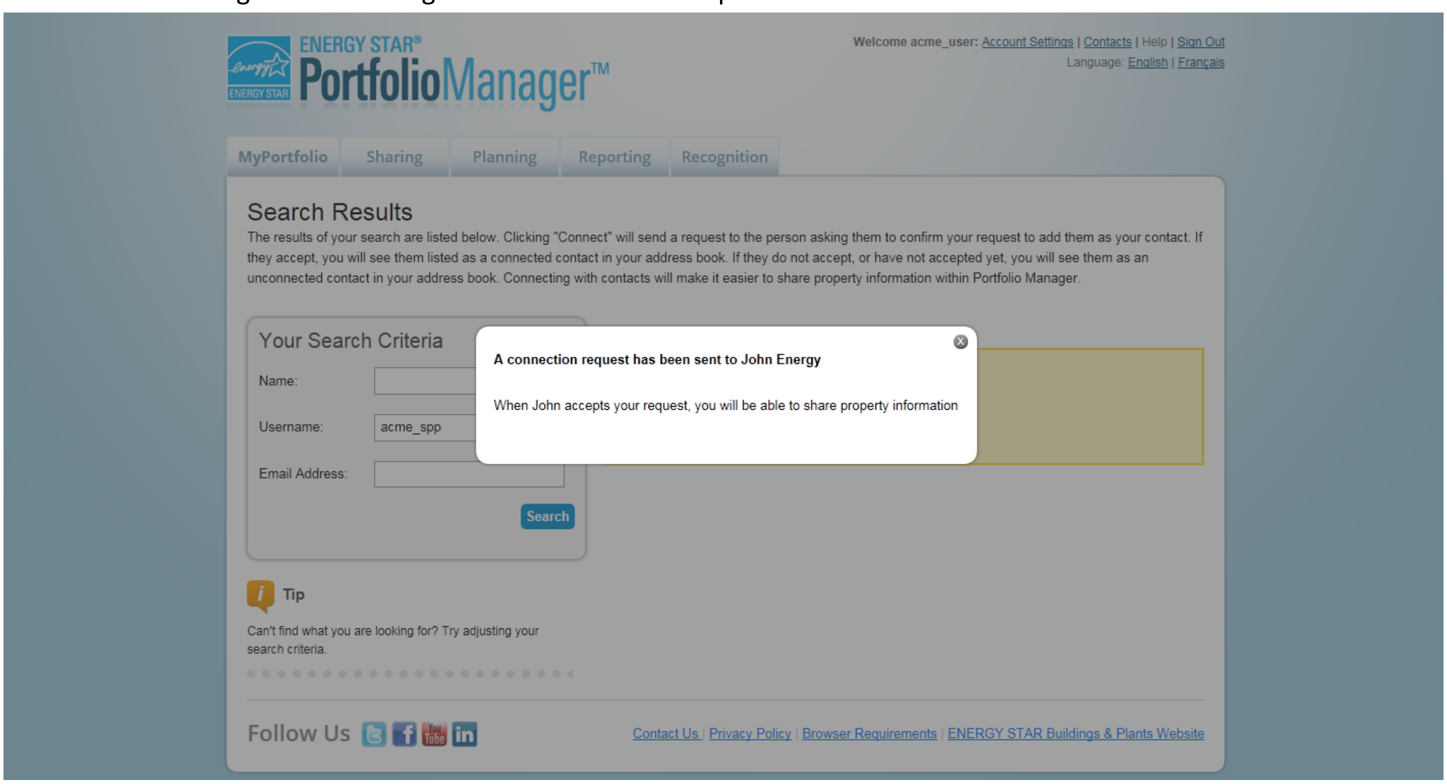
Step 1d: The user selects your organization from the search results and clicks on the “Connect” button.



Step 1e: After clicking the connect button, the user will be prompted to accept any terms of use you have specified and will be asked to submit the account-level custom field values that you have configured previously via web services.



If no account-level custom field values have been configured, the user will not receive a prompt. Upon completion, the user will see a dialog box confirming that the connection request has been sent.

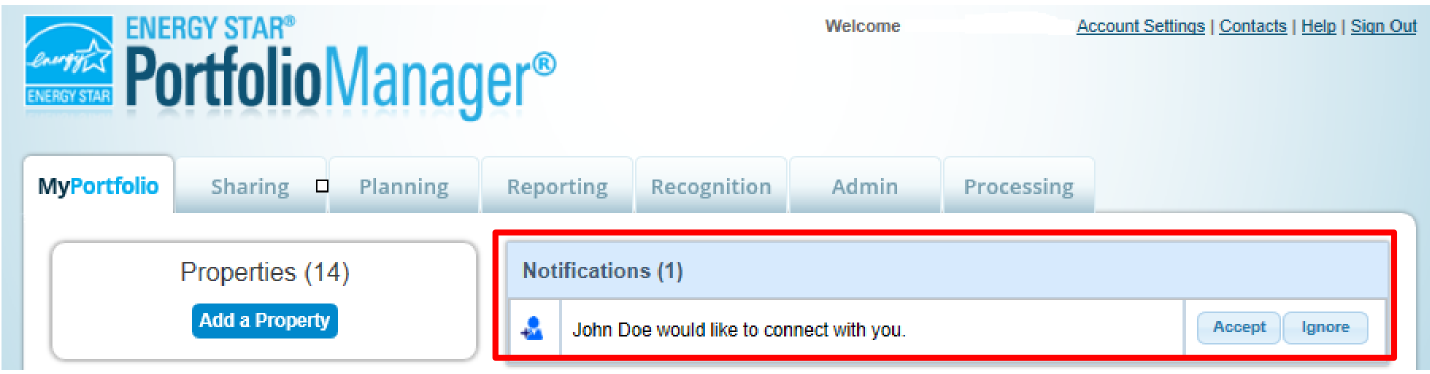


Step 2: You Accept the Connection

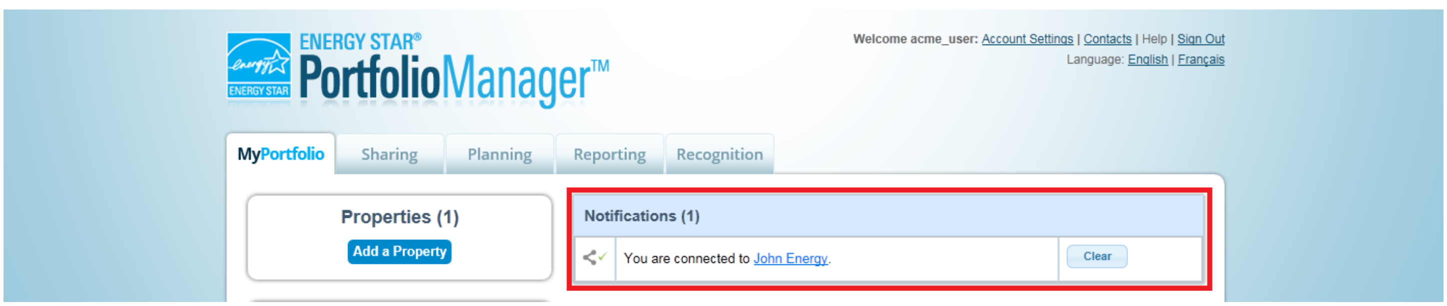
Step 2a: Obtain a list of pending connection requests by running [GET /connect/account/pending/list]

Step 2b: Accept the pending request by running [POST /connect/account/(accountId)].

Note: You can also accept connections via the Portfolio Manager website by logging into your account and confirming any pending connections in your notifications box (an example notification is shown in the screenshot below).

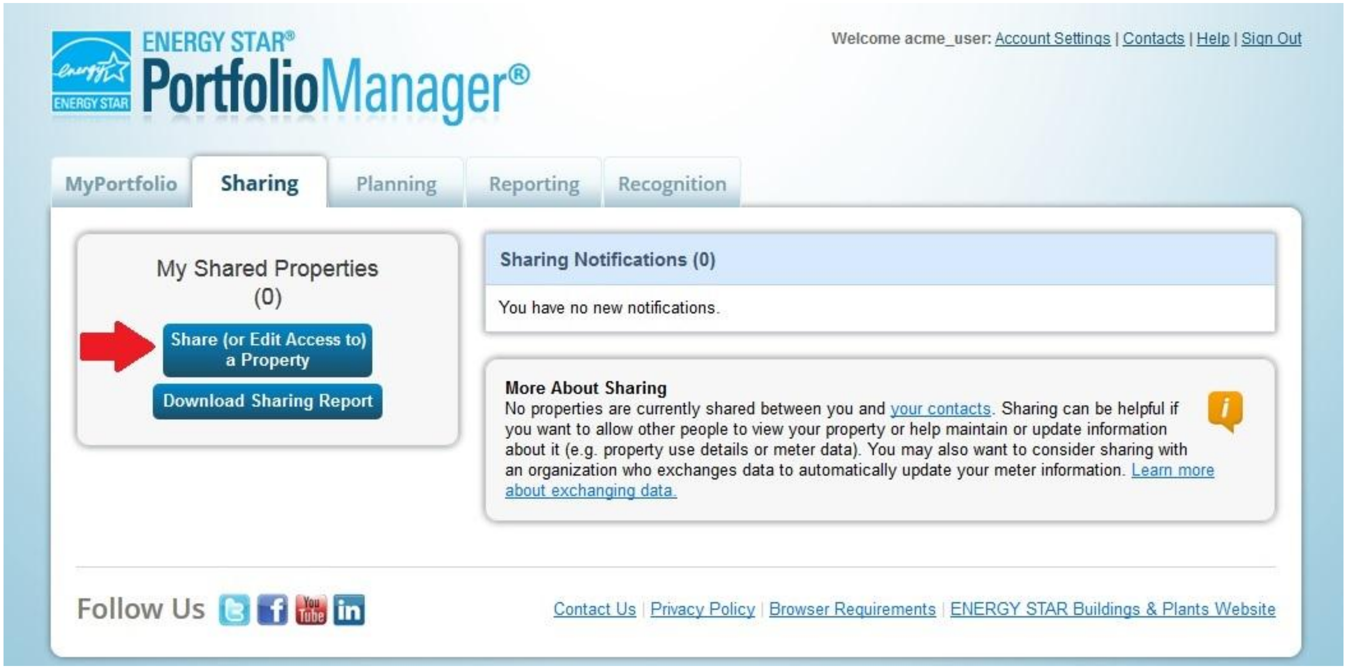


The user is notified that the connection request has been accepted via a message that will appear in the "Notifications" section of the main screen of Portfolio Manager the next time the user logs into Portfolio Manager.

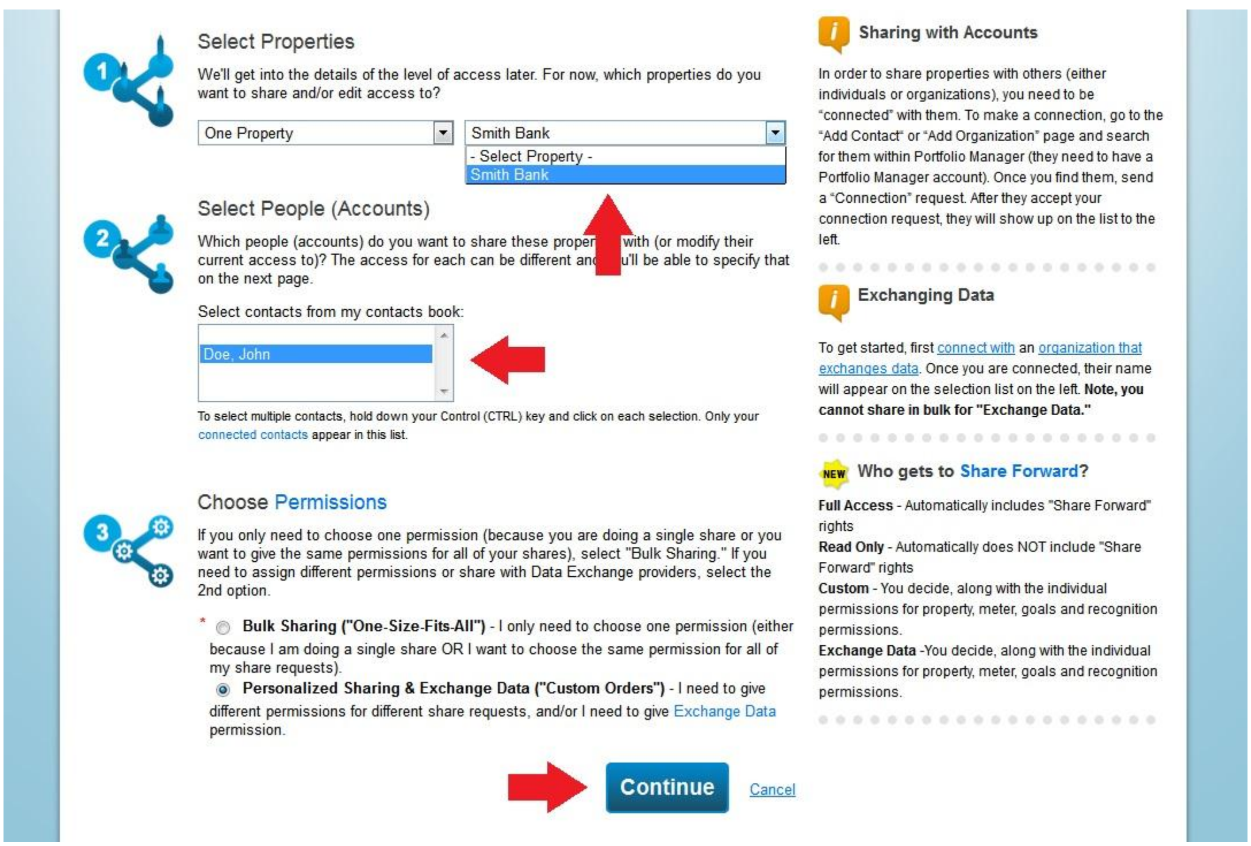


Step 3: The User Shares a Property and/or Meters with You

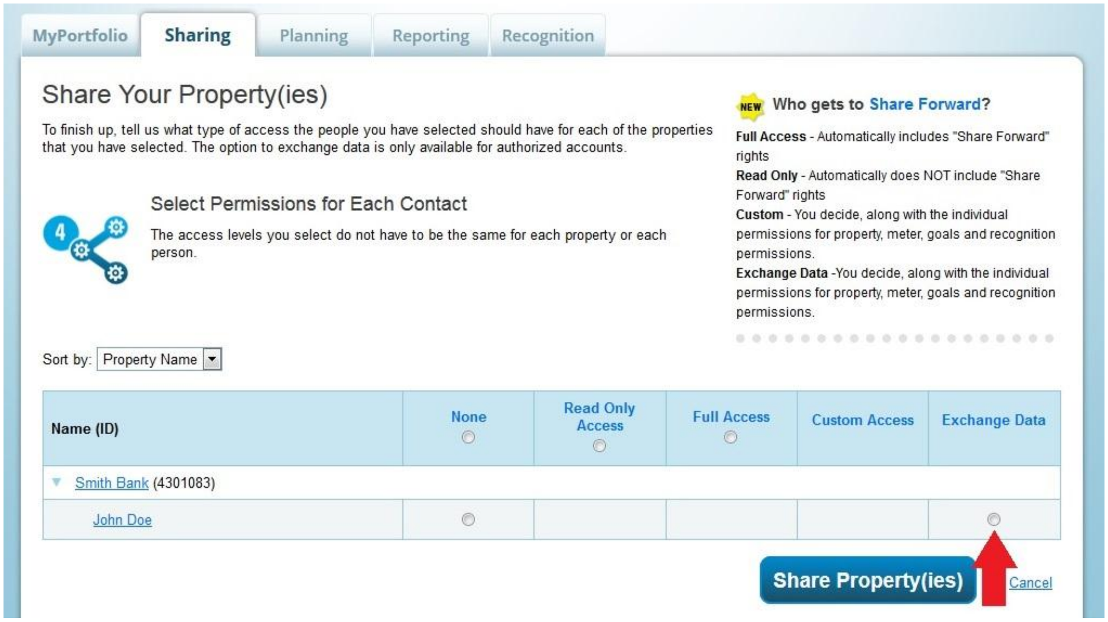
Step 3a: The user logs into Portfolio Manager, clicks on the “Sharing” tab and clicks “Share a Property.”



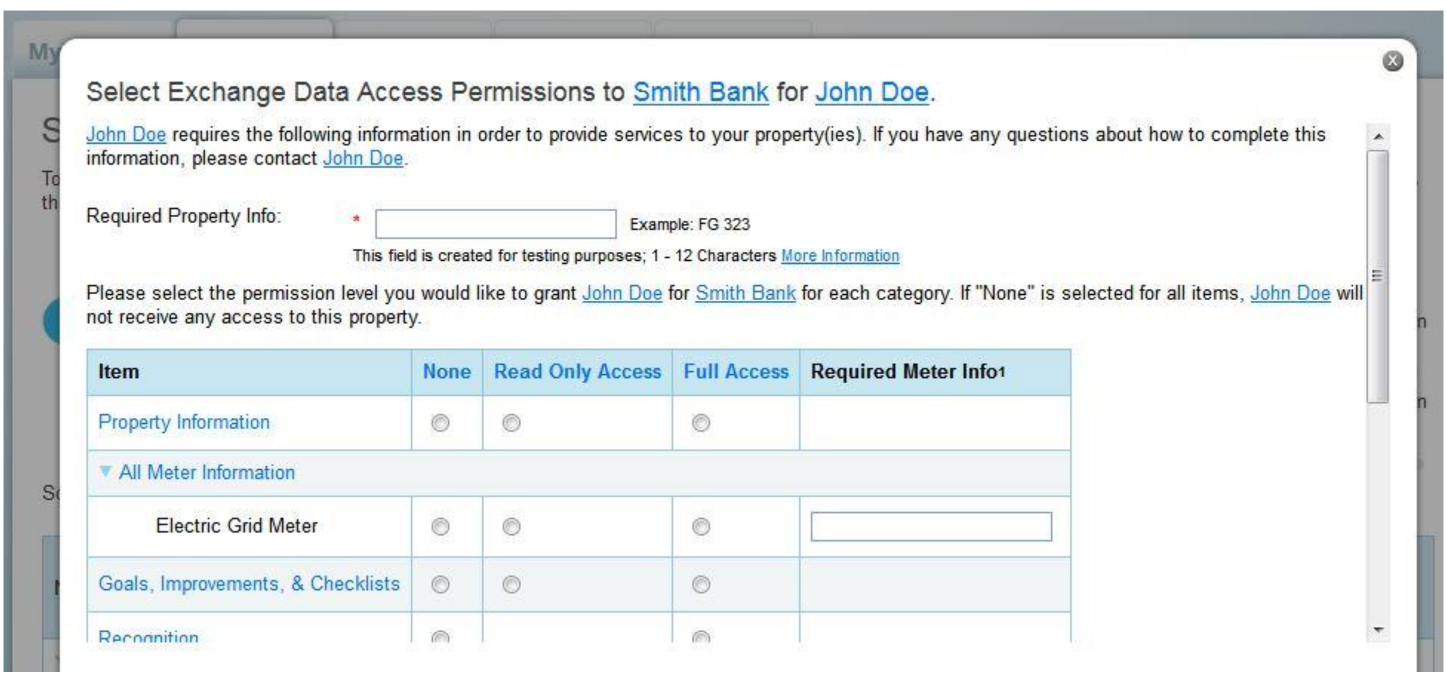
Step 3b: On the “Share Your Properties” screen, the user selects the property(ies) that he or she wishes to share and selects your account from the dropdown list of accounts. The user then selects “Continue.”



Step 3c: The selected properties will now appear on a permissions selection screen. The user will be able to grant different levels of sharing access by clicking on the radio button for “Exchange Data.”



Step 3d: A dialog box will appear that will allow the user to select a level of access for exchanging data from “None” to “Read Only” to “Full Access” for the property and its meters. If the user cannot send out meter share requests, it could be that your system does not support that specific meter, in which case an alert will appear beneath the dialog box to notify the user. The user will also enter values for any property-level and meter-level custom fields on this screen.



Step 4: You Accept the Property and Meter Shares

After the user has generated a property-level or meter-level sharing request, you must retrieve the request and then accept or reject it. A user may choose to share read or read/write access to a property, but not the corresponding meters. Alternatively, a user may choose to share read or read/write access to meters, but not read/write access to corresponding property. If a meter has been shared, but the user does not explicitly share the associated property, the permissions screen shown above will automatically mark the receiving account's access level to the property as read-only before the user submits the share request. If you accept a meter share, any pending property share associated with that meter will be automatically accepted. Acceptance of a property-level share ***does not*** cause corresponding meter share requests to be accepted. Meter-level sharing requests must be accepted separately.

Step 4a: Search for pending property share requests using GET /share/property/pending/list

Step 4b: Accept pending property share requests by running POST /share/property/(propertyId)

Step 4c: Search for pending meter share requests using GET /share/meter/pending/list

Step 4d: Accept pending meter share requests by running POST /share/meter/(meterId)

You can disconnect from a user at any time using the POST /disconnect/account/(accountId) service. Disconnecting from an account will not automatically disconnect the property and meter shares associated with that account. If you wish to disconnect from an account and disconnect all associated properties and meters, you can set an optional flag in the account disconnect service that will remove all connections. You can also remove an individual property or meter share at any time using POST /unshare/property/(propertyId) and POST /unshare/meter/(meterId).

Share Forward

Portfolio Manager offers the ability to "share forward," or share a property that was shared with you. For example, a property owner may share a property with their consultant and want their consultant to share this property with you. In order to execute these shares the "middleman" will need to connect with you, and then share the owner's properties and meters. From a web services standpoint, all shares, whether originated by the account that owns the property (also called the Property Data Administrator or PDA) or originated by someone with whom the PDA has shared their property, will be accessed through the PDA's account ID. The way that you will receive and process these shares will depend on whether or not you are already connected to the PDA at the account level:

If you are already connected to the PDA

If you already have an account-level connection with the PDA, you will see incoming property and meter shares and be able to accept them the same as any other share (see Step 4 above). 'Share Audit' information is included with the pending share request that always lists the PDA's account ID in the <accountID> field and then additional <notificationCreatedBy> and <notificationCreatedByAccountId> fields that identify the account that generated the share so that you can determine whether a "middleman" account or the PDA initiated the share request. Middleman accounts can also be identified after the share has been accepted by pulling the "Property Shared By" metrics in the GUI or using the GET-Metrics web service to pull the propertySharedBy metric.

If you are <u>not</u> already connected to the PDA

If you are not already connected to the PDA, you will be sent an account-level connection request from the PDA ***at the same time*** that you are sent the property and meter shares. The order in which you process pending account-level connections and property/meter shares may be important to your business process. See below regarding the implications of different processing orders:

- **If processing pending account-level connections before property and meter shares:**
  - If you accept the new account-level connection request first (as in Step 2 above), you can then move on to accept (or reject) each individual property and meter share request, as you do for other shares.
  - If you reject the new account-level connection request first, you automatically reject all pending property and meter share requests. Your rejection of the connection request indicates you do not wish to exchange data with that customer.
  - Processing the account connection first is recommended if it is important to your business that you verify a valid account-level connection before transmitting data.

- **If processing pending property and meter shares first:**
  - If you accept a property and/or meter share that belongs to an account to which you are not yet connected, you will automatically accept the pending account-level connection request, too. This is similar to accepting a pending meter share which will automatically "roll-up," accepting the pending share for that property if the latter hasn't been accepted already.
    - Please note that pending property and meter share requests, as shown in a GET /share/meter/pending/list or GET /share/property/pending/list response, contain the account ID of their PDA account, so it is recommended that you use the share requests to obtain the PDA's account ID for your database's records since you will not see the connection request from the PDA if you accept one of their property or meter shares first.
      - If you are not able to do this during the share, you can access the PDA's account information after accepting the share by running a GET /metrics call and including the metrics propertyDataAdministratorAccountId and propertyDataAdministratorAccountId.
  - If you reject a property and/or meter share request then you will not automatically reject the account-level connection request. Rejections do not "roll-up" the way acceptances do.

Ongoing Share Management

Edits to Your Access Levels by the PDA and Other Users

Once established, sharing permissions can be revised by the PDA or any other user with full access to the property and/or meter at any time. When a user makes edits to your access, such as editing your permissions to individual meters, or editing your permissions to a property, you will receive a notification for each edit made. These notifications can be obtained by running GET /notification/list; an example notification is provided below:


```
<notificationList>
<notification>
<notificationTypeCode>SHAREUPDATE</notificationTypeCode>
<notificationId>129681</notificationId>
<description>
Electric Grid Meter - Access level revised to Read Only by Customer John.
</description>
<accountId>88338</accountId>
```

<propertyId>5234642</propertyId>
<meterId>541018</meterId>
<notificationCreatedDate>2015-01-12T14:23:50-05:00</notificationCreatedDate>

<notificationCreatedBy> John_User_123</notificationCreatedBy>
<notificationCreatedByAccountId>88340</notificationCreatedByAccountId>
</notification>
</notificationList>

Please note that if your account is not connected with the account that edited your access, you will need to establish an account level connection with them in order to pull additional information on their account. You can submit a connection request to their account via web services using the account ID in the access edit notification.

Permissions edits automatically take effect; you do not need to accept them. The same process occurs when a user deletes a meter from a property they've shared with you.

Shares that a user does not edit will remain unchanged. When a user shares a new meter with you on a property with additional meters that have already been shared with you, those already established property and meter shares will not be affected; you will only need to accept the new meter share. As a best practice, EPA recommends that all providers exchanging data with users check their pending connection requests, property and meter share requests, as well as share edit notifications at the beginning of each session when using Portfolio Manager's web services.

Transfer of Ownership

Portfolio Manager also allows the transfer of ownership of a property record from one account to another account (i.e. make someone else the PDA). Typically, an ownership transfer happens in one of two cases:

- **An actual change in ownership (deed/title).** In this case, the physical property is bought/sold and the old owner gives the Portfolio Manager record to the new owner.
- **Staffing change within a company.** In this case, Company XYZ may own the property and it is managed in Jane Doe's account. When Jane leaves Company XYZ, she transfers ownership of the Portfolio Manager record to Mike Smith, who will take over as PDA.

When a property is transferred from one account to another, all existing sharing arrangements are left in place. This means when your customers transfer ownership of their property to another account, the share for that property may now be with an account with which you are not connected.

When a property transfer takes place, you receive a web services notification through GET /notification/list telling you that the property has been transferred. The notification includes the ID of the property that was transferred and the account ID and username of the new PDA. The notification does not include the new PDA's contact information for privacy reasons.

If you do not know the new PDA or why the property was transferred, it is up to you to decide whether you want to continue to exchange data. If you need confirmation that you are connected to the PDA's account (i.e. to confirm that the PDA has authorized you to release data for a property), you will need to set up a business rule that will stop exchanging data whenever a property is transferred.

If your account is not already connected to the new PDA account:
The new PDA account is not automatically connected with your account nor is a connection request automatically submitted to your account from their account. The recipient (new PDA) of the transferred property must submit an account level connection request manually in the GUI if they would like to be connected with your provider account.

We highly recommend making an account level connection with the new PDA because if there is no connection between your two accounts, any GET call your account makes that includes the new PDA's account ID will result in a 403 error.

For example, you can use the new PDA's account ID (as shown in the transfer notification) to obtain information on the property in GET /account/accountID/property/list calls only once your account is connected with the PDA's account.

You have two options to create an account level connection with the new PDA:

1) If you do not require acceptance of terms and conditions and/or account level custom fields, you can submit an account connection request to the new PDA via Portfolio Manager using the account ID you received in the above transfer notification.

2) If you require acceptance of terms and conditions and/or account level custom fields, you will need to terminate the property share (and its meter shares) once the transfer has occurred. Within the xml of the share termination call, you can include a note to the new PDA requesting that they send your account a connection request that agrees with your terms and conditions and provides any needed custom field data by going to their account's Contacts page in the GUI. After a connection is established, the meters and properties can be re-shared from the new PDA to your account.